

# Notice of Allowability

Application No.

10/649,557

Examiner

Jeff Piziali

Applicant(s)

KIM, HYUNG-SEOK

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment and Remarks filed 28 February 2007.
2. ☒ The allowed claim(s) is/are 1 and 3-20 (renumbered as claims 1-19).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
Jeff Piziali  
14 May 2007

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Drawings*

2. The drawings were received on 21 February 2007. These drawings are acceptable.

### *Allowable Subject Matter*

3. Claims 1 and 3-20 (renumbered as claims 1-19) are allowed.
4. The following is an examiner's statement of reasons for allowance:

The present invention comprises a liquid crystal display driver for stabilizing driving voltage levels. The prior art, *Miyazaki (US 2002/0154080 A1)* discloses a liquid crystal display driver (see Paragraph 2) comprising: a driving voltage generating circuit [Fig. 1B; 121] for generating first through fifth driving voltages [Fig. 8; V1, V2=V82, V3, V4, and V5] and outputting the generated voltages via first through fifth output terminals [Fig. 8; V1, V2=V82, V3, V4, and V5]; a common/segment driving circuit [Fig. 2; 221 and 222], controlled by a driving polarity signal [i.e. frame signal] that is applied to the common/segment driving circuit, for receiving the first through fifth driving voltages to generate a common driving signal [i.e. com output] and a segment driving signal [i.e. seg output] (see Paragraphs 38-40); a first

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capacitor [Fig. 8; C0] connected between the first output terminal and a ground voltage; a second capacitor [Fig. 8; C4]; a third capacitor [Fig. 8; C3]; and a control circuit comprising a plurality of switches [Fig. 8; SW1-SW3] for controlling connection of the output terminals and the capacitors in response to the driving polarity signal (see Paragraphs 73-75), wherein each switch of the plurality of switches is controlled by the driving polarity signal (see Paragraphs 60-62), and wherein the capacitors are selectively connected to driving voltages used by the common/segment driving circuit, but not to driving voltages not used by the common/segment driving circuit, according to a logic state of the driving polarity signal (see Paragraphs 63-64); and wherein the control circuit comprises:

a first switch [Fig. 8; SW3] for connecting one end of the second capacitor [Fig. 8; right end] in a first position of the first switch [Fig. 8; SW3b] to the first output terminal [Fig. 8; V1] and in a second position of the first switch [Fig. 8; SW3a] to the fifth output terminal [Fig. 8; V5] in response to the driving polarity signal;

a second switch [Fig. 8; SW2] for connecting the other end of the second capacitor [Fig. 8; left end] in a first position of the second switch [Fig. 8; SW2b] to the second output terminal [Fig. 8; V82] and in a second position of the second switch [Fig. 8; SW2a] to the ground voltage [Fig. 8; at SW1a] in response to the driving polarity signal;

a third switch [Fig. 8; SW1] for connecting one end of the third capacitor [Fig. 8; right end] in a first position of the third switch [Fig. 8; SW1b] to the second output terminal [Fig. 8; V82 via SW2b] and in a second position of the third switch [Fig. 8; SW1a] to the fourth output terminal [Fig. 8; V4] in response to the driving polarity signal; and

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a fourth switch [Fig. 8; SW2] for connecting the other end of the third capacitor [Fig. 8; left end] in a first position of the fourth switch [Fig. 8; SW2a] to the third output terminal [Fig. 8; V3 via SW1b] and in a second position of the fourth switch [Fig. 8; SW2b] to the fifth output terminal [Fig. 8; V5] in response to the driving polarity signal (see Paragraphs 73-75).

However, as argued by the applicants (on Pages 10-14 of the 'Amendment C' filed 28 February 2007), the prior art does not expressly teach the subject matter of, *a first switch for connecting one end of the second capacitor, in a first position of the first switch, to the first output terminal and connecting the one end of the second capacitor, in a second position of the first switch, to the fifth output terminal in response to the driving polarity signal; a second switch for connecting the other end of the second capacitor, in a first position of the second switch, to the second output terminal and connecting the other end of the second capacitor, in a second position of the second switch, to the ground voltage in response to the driving polarity signal; a third switch for connecting one end of the third capacitor, in a first position of the third switch, to the second output terminal and connecting the one end of the third capacitor, in a second position of the third switch, to the fourth output terminal in response to the driving polarity signal; and a fourth switch connecting the other end of the third capacitor, in a first position of the fourth switch, to the third output terminal and connecting the other end of the third capacitor, in a second position of the fourth switch, to the fifth output terminal in response to the driving polarity signal*, in combination with the remaining features and subject matter of the instantly claimed invention.

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This distinct structural and operational arrangement has been incorporated into all three pending independent claims (i.e. claims 1, 10, and 18 -- renumbered as claims 1, 9, and 17), thereby rendering them allowable.

Any comments considered necessary by applicants must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeff Piziali  
14 May 2007